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The future in our hands: addressing the leadership challenge of climate change

Background note by the Secretary-General*

1. Climate change is one of the most complex, multifaceted and serious threats the world faces. The response to this threat is fundamentally linked to pressing concerns of sustainable development and global fairness; of vulnerability and resilience; of economy, poverty reduction and society; and of the world we want to hand down to our children.

2. As the result primarily of human-caused emissions, our climate is changing. It is becoming less stable, more volatile and warmer: global average surface temperatures have increased by 0.74 degrees Celsius during the past 100 years. Seasons are arriving at different times as normal variations are increasing; glaciers are receding; sea levels are rising. It is likely that extreme weather events are becoming more frequent and more severe. Droughts, floods and heat waves are already contributing to crop failures, conflicts and a steadily increasing toll of death and human suffering. As the planet warms it is highly likely that there will be an increase in the frequency and severity of floods and droughts in many regions.

3. Climate change is not only an environmental issue; it has clear economic and social consequences. It is inextricably linked to the broader sustainable development agenda, including the challenge of poverty reduction. The effects of climate change will have a disproportionately severe impact on the poorest and most vulnerable of the world's communities, and they threaten to put the Millennium Development Goals beyond reach unless action is taken now. But the links between climate change and development are not limited to adaptation. A long-term solution to the climate change problem is also needed — one that is fair, sustainable and based on developing countries' right to grow their economies.

4. In 1992, the world's leaders met in Rio de Janeiro for the United Nations Conference on Environment and Development, also known as the Earth Summit. Among the treaties they adopted there was the United Nations Framework Convention on Climate Change, which has now been ratified by 191 countries and which remains the central reference point in global climate change policy. Five

* The present note should be read in conjunction with the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. A background document made available by the President of the General Assembly for the recent thematic debate on climate change may also be found at http://www.un.org/ga/president/61/follow-up/climatechange/ClimateChangeBackgroundPaper.pdf.

years later the Kyoto Protocol was adopted, which then came into force in 2005. The Conference of the Parties to the Convention, to be held in Bali, Indonesia, in December 2007, will be a decisive event in determining the future of global action on the main elements of the global response to climate change, namely, mitigation, adaptation, technology and financing.[1]

5. To prepare the way for negotiations in December and those that will follow, and in view of the clear sense of urgency that leaders conveyed to him through his three special envoys on climate change, the Secretary-General has decided to convene world leaders to discuss the climate challenge. This high-level event is not itself a negotiation: formal negotiations between countries should remain under the auspices of the Convention. But faced with an issue of this urgency, it is vital that world leaders have the opportunity to provide visionary leadership on the way forward. In this way, a strong political signal, at the highest level, that Governments are ready to accelerate work under the Convention will be sent to the Conference in Bali.

6. To this end, the views of world leaders are sought on the central areas of global climate change policy: adapting to the impact of climate change and building increased resilience, making full use of technology and innovation, financing the response and determining the efforts required to stabilize the level of greenhouse gases in the atmosphere. The present background note provides an overview of each of the issues and questions to provoke discussion. The four areas naturally overlap with each other: the intention is not to keep them rigidly separate, but rather to reflect the connections among them.

7. A global challenge as unprecedented as climate change will test humanity's capacity to solve shared problems as never before. Climate change is not just a threat that transcends national borders; it also cuts across divisions between numerous areas of policy — from energy to transport, from food security to water management and from individual behaviour to global governance. But above all, climate change calls upon humanity to think along much longer time scales than we have been accustomed to doing in recent years. Ultimately, the greatest responsibility that any of us have is to our children, and to the future.

The challenge of adaptation: from vulnerability to resilience

8. Even if a comprehensive framework for stabilizing greenhouse gas concentrations were adopted tomorrow, human-caused warming and sea-level increases would still continue for centuries, and a global strategy for adaptation would still be essential. Such a strategy will above all be founded on sustainable development and meeting the needs of developing countries — especially small island developing States and least developed countries. They are the ones with the most to lose from climate change and the least capacity to adapt to its effects, despite having contributed the least to causing the problem in the first place.

9. Work on adaptation is seldom accomplished through stand-alone efforts that are separate from other policy areas. On the contrary, effective national adaptation strategies must be integrated into countries' economic, social and governance systems and firmly embedded in domestic policy planning across the board. Many developing

[1] The thirteenth session of the Conference of the Parties to the Convention and the third session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, 3-14 December 2007.

countries are already initiating the development of their own national adaptation programmes and action plans. Regional cooperation is becoming increasingly important, given the extent to which climate change will ignore national borders.

10. Adapting to the impact of climate change needs to be a global undertaking, requiring an unparalleled expression of solidarity among countries. In particular, an essential part of any integrated global adaptation strategy is likely to include significantly increased financing and assistance in capacity-building provided by developed to developing countries. The financial mechanism of the Convention and the Kyoto Protocol's Adaptation Fund will be important and will need to be scaled up substantially.

11. External financial assistance will be needed to assist developing countries with their adaptation needs. In particular, this will need to be targeted at the sectors and countries that are already highly dependent on external support, for instance the agricultural and health sectors in the least developed countries or coastal infrastructure needs in small island States and other developing countries that are highly vulnerable to sea-level rise. The impact of increased climate variability on ecosystems, as well as desertification, drought and food insecurity, especially in Africa, also need to be given high priority.

12. Information- and knowledge-sharing among Governments also needs to improve, for example on which coping strategies have worked where. Much better data on the projected impact of climate change are also needed to help countries prepare. While there is increasing clarity about the projected effects at the global level, data about regional, national and local level consequences are much more limited.

13. Above all, States and international agencies will be called upon to become fully cognizant of the benefits of building resilience — a way of thinking about the world that is fundamentally concerned with managing unexpected change. While reducing greenhouse gas emissions is essential for cutting future disaster risks, an immediate task in strengthening communities' resilience is preparing for more extreme weather conditions through disaster risk reduction programmes, for example to strengthen public risk awareness, early warning systems and disaster preparedness. The Hyogo Framework for Action 2005-2015 on national and community resilience to disasters sets out an agreed plan for reducing vulnerability to severe weather and climate change and for adapting to the threat of future increases in climate extremes.

14. Even as we grapple with uncertainties, we know that addressing current vulnerabilities is a good way of enhancing resilience to future effects of climate change. Economic growth is critical to reducing vulnerability: more resources mean greater access to technology, alternative means of making a living and protection from extreme weather events. In the context of natural disasters and the environment, resilience is about maintaining the delivery of vital services and resources into the long term, even while adapting to shocks and complex change. Building "resilience thinking" into policy and practice will be a major task for all of the world's citizens throughout the new century.

Questions for discussion

- How can adaptation strategies be better integrated into national policy and development planning exercises?

- How will the impact of climate change affect prospects for sustainable development, including achievement of the Millennium Development Goals? How can measures taken to achieve the Millennium Development Goals help to build resilience?
- How can relevant United Nations agencies and the wider international system work with developing countries to build their resilience?
- What international mechanisms and frameworks are needed to address the long-term risk of climate change to sustainable development, including global food, water and health security?

Innovating a climate-friendly world: the role of technology and its dissemination

15. Technology will play an essential role in the response to climate change, in both tackling its causes and adapting to its impact. A massive push is therefore required to roll out the needed technologies. Most of the technologies required to step up the fight against climate change are already available. Improved energy efficiency and conservation through behavioural changes, renewable energy, water-saving technologies, anti-drought seeds and land restoration already have the potential to deliver global emission reductions and action on adaptation on the scale needed in the short term. But a fourfold challenge must first be met.

16. First, low-carbon alternatives are often considered more expensive than existing fossil fuel-based technologies. This problem will diminish as demand for cleaner technologies increases, as approaches that factor in environmental costs are taken up and as current price distortions are addressed. But this process can begin only if the market is primed effectively by appropriate policies and carbon markets continue to develop. Recent years have seen a wide variety of policy instruments tested to achieve this end; the challenge here is to unite these diverse strategies into a coherent global whole.

17. Second, there are frequently formidable obstacles to the use of cleaner technologies. These range from behavioural challenges, such as persuading individuals to use energy more efficiently, to raising sufficient investment capital for new energy infrastructure. Here too, a wide range of innovative public policy approaches will be needed to overcome the obstacles, involving non-governmental actors as well as States and international agencies.

18. Third, a major push on research and development in new technologies, such as carbon capture and storage, hydrogen and fuel cells, biofuels, power storage systems and microgeneration, clean energy technology, early warning systems for extreme weather events and biotechnology, will also be required, which will in turn require a range of Government support packages.

19. Fourth, technology transfer from developed to developing countries, and increasingly between developing countries, will be needed on an unprecedented scale. Today many developing countries experiencing rapid growth are making huge investments worth billions of dollars in capital stock, such as infrastructure and power generation, that will be used for 30 years or more. The question of whether such investments contribute to sustainable development is a major issue for the long-term future that is being decided now. A well-functioning carbon market is likely to be a prominent feature in any future mitigation framework.

20. Many developing countries are already undertaking significant domestic action. But to achieve transfer of technology on the scale needed, a powerful global incentive framework will be indispensable. Ambitious developed country targets could drive increased demand for the emissions trading credits that the clean development mechanism generates, helping to accelerate the process of clean technology development and deployment while achieving sustainable development objectives.

21. Any strategy for improving the roll-out of technology is likely to rest in particular on the involvement of the private sector as a central player. The most effective policies are likely to be based on a clear understanding of the conditions that will lead businesses to invest on the required scale, including regulatory certainty and continuation of the carbon market.

Questions for discussion

- Which mechanisms will accelerate the deployment of adaptation and mitigation technologies that have the most potential for different countries and regions?
- What should the role of carbon finance, emissions trading, regulation and other Government-led initiatives be in driving clean technology investments? What is the role of the private sector, and how can private investment flows into environmentally sound technology be enhanced?
- How can multilateral and bilateral trade cooperation agreements work to create incentives for the deployment of environmentally sound technologies?
- How can investment in infrastructure that is already taking place be made more responsive to the climate?

Financing the response to climate change: investing in tomorrow

22. Combating climate change will involve massive shifts in investment patterns in a huge range of sectors, spanning power generation, industry, the built environment, waste, transport, agriculture and forestry. In many of those sectors, the lifetime of capital stock can be 30 years or even more: investment decisions taken today will therefore affect the world's emissions profile for many years to come.

23. The challenge is magnified by the fact that total investment in physical assets is projected to triple between 2000 and 2030, with $20 trillion projected for needs in the energy supply sector alone. A large proportion of this unprecedented investment will take place in developing countries. International climate policy needs to create the conditions that would allow such investments to be directed towards more sustainable options as much as possible and not lock in unsustainable emission pathways.

24. On the mitigation side of action on climate change, the investment challenge is twofold. First, ways need to be found to shift the investments already being made by private and public investors towards more sustainable options by optimizing the use of investment capital and sharing the risks among the public and private actors best able to deal with them. Second, and just as important, it will be necessary to increase the pool of international private and public capital available for investment in a more sustainable climate.

25. On the adaptation side of the challenge, additional investment and finance will be no less essential. Many new investments, in both developed and developing countries, will need to take into account the impact of climate change, particularly when the investment is in sectors that are especially vulnerable to climate variability or extreme weather events, such as agriculture and infrastructure. At the same time, additional resources will be needed too, especially in demonstrating and sharing new coping strategies and in embedding resilience thinking into domestic policies and practices. Additional external public funding is likely to be needed for adaptation measures in all sectors. Current mechanisms and sources of financing are limited, and the identification of new sources of funding will be essential.

26. Improvement in and an optimal combination of mechanisms, such as the carbon markets, the financial mechanism of the Convention, official development assistance, national policies and, in some cases, new and additional resources, will be needed to mobilize the necessary investment and financial flows to address climate change. A suite of mechanisms targeting options ranging from energy efficiency improvements to new and renewable sources of energy to enhancing sequestration need to be improvised. Particular attention should be given to sectors and countries that are already highly dependent on external support, such as the least developed countries and developing countries that are highly vulnerable to sea-level rise.

27. The carbon market, which is already playing an important role in shifting private investment flows, would have to be significantly expanded to address needs for additional investment and financial flows. National policies can assist in shifting investments and financial flows of private and public investors into more climate-friendly alternatives and optimize the use of available funds by spreading the risk across private and public investors. Building capacity in countries to channel investment into climate-friendly technologies is an integral component of this.

28. Influencing the direction and volume of investment flows will involve working with a wide range of partners, spanning both the public and private sectors. Multilateral investment banks, regional development banks and bilateral and multilateral aid agencies and, of course, the United Nations, have especially important roles to play. The Clean Energy Investment Framework, the Nairobi Framework and a range of frameworks launched by regional development banks, provide good examples of the kind of partnership that will become increasingly important in meeting this challenge.

Questions for discussion

- How should the scaling up of developing country adaptation to climate change be financed?
- How can the currently available sources of investment and finance be better optimized to address climate change? How can the existing mechanisms under the Convention and the Kyoto Protocol better complement each other? What other sources of investment and finance could be developed?
- How can Governments and multilateral bodies best work with the private sector to influence the volume and direction of new investment towards climate-safe options?

- What should the role of public financing, carbon finance, emissions trading, regulations and other Government-led initiatives be in driving investment in climate change mitigation?

Reducing emissions and stabilizing the climate: safeguarding our common future

29. In 2007, human activity will cause more than 25 billion tons of carbon dioxide to be emitted into the atmosphere. The air now contains 386 parts per million (ppm) of carbon dioxide — over a third higher than the 280 ppm prevailing in pre-industrial times — and concentration levels are rising steadily at more than 1 ppm each year. Any comprehensive solution to climate change will by definition stabilize concentrations of greenhouse gases in the atmosphere at a safe level, which has not yet been quantified, and this goal is defined as the central objective of the Convention.

30. But the first steps towards reducing global emissions have already been taken. The Convention's aim of reducing developed country emissions to 1990 levels by 2000 was achieved, albeit mainly because of reduced emissions in countries with economies in transition. More significantly, under the 1997 Kyoto Protocol, ratified by 175 countries and in force since 2005, 36 industrialized countries committed to reducing their emissions in line with agreed targets by 2012 — although the targets agreed under Kyoto are not consistent with achieving the goal of the Convention.

31. Now, negotiations on what should follow the end of Kyoto's first commitment period are beginning to get under way. More concerted and coherent multilateral action, involving substantial emission reductions by industrialized countries and incentives for action by other countries, is required. An early peaking of global emissions will be essential if the worst damage is to be avoided. The Bali Conference in December 2007 will be a critical step on the road to a scaled-up global response to today's most pressing global challenge.

32. Many countries have indicated that future international cooperation on climate change will need to be based on sound science and be compatible with long-term investment planning strategies. Guided by the objective of stabilizing greenhouse gas concentrations at safe levels and by the increasing recognition that the cost of inaction will exceed the cost of action, more robust international cooperation is increasingly the focus of attention. But the means of achieving this end must be equitable if global consensus is to be reached. This tenet, adopted in Rio at the Earth Summit, was also enshrined in the Convention as the principle of "common but differentiated responsibilities" under which developed countries take the lead in responding to climate change.

33. Developing countries have the least historical responsibility for contributing to the problem of climate change, and their per capita emissions remain much lower than those of developed countries. Yet they will face the worst of the damage driven by our changing climate and have the least capacity to adapt to its effects. So while only a global solution can solve the global problem of climate change, this solution must be consistent with the overriding priority of sustainable development, poverty reduction and developing countries' right to grow their economies — while avoiding the errors of other countries' past development paths.

34. Many developing countries are already undertaking significant domestic action of their own and are beginning the transition to climate-safe development paths.

Continuing to enhance developing country engagement through financial and technological incentives and support for action, including land-use management, avoidance of emissions from deforestation and improvements on other related issues, will be a vital part of the future of global climate change policy. If developing countries have the most to lose from the problem of climate change, they also have — potentially, if an equitable framework can be agreed upon — much to gain from the solution.

Questions for discussion

- What pathway should climate talks on mitigation follow over the next two to three years?
- How can countries ensure that national strategies and programmes add up to an integrated, environmentally sound outcome consistent with sustainable development at the global level?
- How can future strategies best build on current efforts?